

Applicant: Anthony John Barnes
Application No.: 10/552,189

REMARKS/ARGUMENTS

After the foregoing Amendment, claims 1-28 are currently pending in this application. Claims 1-13 have been withdrawn. Claim 14 has been amended. No new matter has been introduced into the application by these amendments.

Claim Rejections - 35 USC § 102

Claims 14-26 stand rejected under 35 USC § 102(b) as being anticipated by U.S. Patent No. 5,971,252 to Rosen.

Claim 14, as amended, recites:

A blank for use in a superplastic forming process, said blank comprising a parent body and an insert joined thereto by means of friction stir welding, wherein the insert is located in a cut out region of the parent body and at least one of the parent body and the insert is made of a material which exhibits superplastic properties.

Underline emphasis added.

In contrast, Rosen teaches an aluminum weld 32 with a trough 34 and a metal filler strip 36. The Office Action points to aluminum weld 32 as being the parent body and metal filler strip 36 as being the insert. However, Rosen fails to teach the parent body or the insert is made of a material which exhibits superplastic properties. The Office Action and points to column 3, lines 36-44 and asserts at least one of the parent body and the insert is made of a material which has superplastic properties. However column 3, lines 36-44, discusses friction stir

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welding parameters and aluminum alloys, not superplastic materials. Rosen mentions 7000 series alloys, which can be processed to give a material a superplastic property, but this superplastic property is certainly not inherent. Absent a clear indication in Rosen that a material is superplastic, it must be inferred that a standard form is disclosed. Rosen only refers to the 7000 series as including a more-difficult-to-repair alloy, which has nothing whatsoever to do with superplasticity. The requirements for superplasticity include a very fine grain size (typically less than 10 μm) that is stable to high temperature. Certain dilute aluminum alloys can be rendered to have stable fine grains by several special methods, but it is not an inherent characteristic. While 7000 series Al alloys may be processed to give the material superplastic properties, Rosen does not teach or disclose joining a parent body to an insert starting with materials made of superplastic material. Rosen does not even mention superplasticity. Accordingly, Rosen fails to disclose or teach the limitations of claim 14.

Claims 15-26 are dependent upon claim 14. Applicant submits that these claims are allowable over the cited prior art references for the same reasons provided above.

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Claims 14-17 and 22-28 stand rejected under 35 USC § 102(b) as being anticipated by U.S. Patent No. 6,537,682 to Colligan.

As discussed above, claim 14, as amended, recites:

A blank for use in a superplastic forming process, said blank comprising a parent body and an insert joined thereto by means of friction stir welding, wherein the insert is located in a cut out region of the parent body and at least one of the parent body and the insert is made of a material which exhibits superplastic properties.

Underline emphasis added.

The cut out region is a hole or opening cut within a larger structure and the insert is fitted this cut out region. A superplastic region is formed in a larger body and only the part of the structure exhibiting greater superplasticity undergoes extremes of superplastic forming.

In contrast, Colligan teaches an improved method of manufacturing a layered superplastically formed structural assembly suitable for use in an aircraft wing. In particular, Colligan teaches welding multiple layers to produce a structure with an oxide layer disposed between two metal alloy layers prior to friction stir welding. This prevents thermocompressive welding as a result of the friction stir welding process.

Colligan fails to teach an insert located in a cut out region of a parent body. The Office Action points to element 23c as being an "insert", however element 23a is just a layer situated between layers 23a and 23b. The layer is not inserted into a

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parent body and instead is slid/placed between layers. Layer 23a is not an insert located in a cut out region of a parent body. Accordingly, Colligan fails to disclose or teach the limitations of claim 14.

Claims 15-17 and 22-28 are dependent upon claim 14. Applicant submits that these claims are allowable over the cited prior art references for the same reasons provided above.

Based on the arguments presented above, Applicant submits that the 35 USC § 102(b) rejections are overcome and respectfully requests withdrawal of the rejections.

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Conclusion

If the Examiner believes that any additional matters need to be addressed in order to place this application in condition for allowance, the Examiner is invited to contact the undersigned by telephone at the Examiner's convenience.

In view of the foregoing, Applicant respectfully submits that the present application is in condition for allowance and a notice to that effect is respectfully requested.

Respectfully submitted,

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